

## ABSTRACT

An epitaxial growth method includes: supporting a substrate for growth (for example, an InP substrate) with a substrate supporter, growing a compound semiconductor layer comprising 3 or 4 elements (for example, a III-V group compound semiconductor such as an InGaAs layer, AlGaAs layer, AlInAs layer and AlInGaAs layer) on the substrate for growth by metal organic chemical vapor deposition, polishing the substrate so that an angle of gradient is  $0.00^\circ$  to  $0.03^\circ$  or  $0.04^\circ$  to  $0.24^\circ$  with respect to (100) direction in the entire effective area of the substrate, and forming the compound semiconductor layer to be  $0.5\mu\text{m}$  thick or more on the substrate by using the substrate for growth.